

PLANNING & DEVELOPMENT DIVISION

REQUEST FOR EXPERT ASSISTANCE

Tracking Information

Requesting Professionals: John Zahina, Staff Environmental Scientist

Requesting Department: Water Supply Department

Project Name: **Peer Review Panel:** Proposed Minimum Flow Criteria for the Loxahatchee River and Estuary within the South Florida Water Management District

Date: July 26, 2002

Introduction/Background

It is the intent of the South Florida Water Management District (District) to ensure that all planning documents produced by staff are based on sound scientific principles and best available information. This draft document represents the District's on going contributions towards developing a technical definition of *Minimum Flows and Levels (MFLs)* for the Loxahatchee River and Estuary. Towards these ends, the District seeks to obtain an objective and expert peer review of the revised draft document entitled: "*Technical Documentation to Support Development of Minimum Flows and Levels for the Loxahatchee River and Estuary*" (*MFL document*), dated July 15th 2002.

Pursuant to Section 373.042, F.S., Water Management Districts must establish Minimum Flows and Levels for aquifers and surface water courses. The minimum flow for a given watercourse shall be the limit at which further withdrawals would be significantly harmful to the water resource or ecology of the area. Specific MFL technical criteria will be established through a state rule development and rule making process, and will be implemented through a multifaceted program of water resource development projects, operations, research and regulation. This peer review is limited to issues regarding establishment of the technical criteria and not to the related implementation process. The District seeks objective review of the technical basis for MFL criteria only (based on best available information); legal interpretations, policy decisions and assumptions are not subject to peer review.

In this effort to develop minimum flows and levels for the Loxahatchee River system, the District identified a narrative definition of “significant harm” as it relates to the MFL statute.

‘Significant harm’ means the temporary loss of water resource functions which result from a change in surface or ground water hydrology that takes more than 2 years to recover, but which is considered less severe than serious harm (Rule 40E-8.021 (24), FAC). ‘Serious harm’ means the long-term loss of water resource functions, as addressed in Chapters 40E-21 and 40E-22, F.A.C., resulting from a change in surface or groundwater hydrology (Rule 40E-8.021 (23), FAC).

This Statement of Work for panelists is designed to organize an independent scientific peer review pursuant to Section 373.042, FS. (attached). In 2001, an expert peer review panel was assembled to critique the technical aspects of an initial draft of the document, followed by a public workshop, Internet feedback, and a final report consolidating the panel’s view. As a result of the suggestions and comments by panelists, additional research and technical development were suggested and completed. This second panel review process is intended to provide an objective assessment of the latest draft MFL document and on the MFL criteria proposed therein.

The peer review will be conducted in a manner allowing public participation through Internet access with the panelists. As part of this public process, as required by law, all substantive communications between the panelists regarding this peer review must be conducted through the designated website. Florida Sunshine Law prohibits phone conversations and/or meetings between two or more of the panelists outside of the public’s access. Reviewers will be provided specific instructions regarding this process. Cecile Ross, Senior Attorney for Office of Council, will be available to answer any specific question you may have regarding legal issues. Ms. Ross may be contacted at (561) 682-6343, or cross@sfwmd.gov.

The scope of the peer review, under the statute, is very broad with regard to technical or scientific issues. Any scientific assumption, data, and/or modeling results, including assumptions in models, used in the development of the technical criteria are subject to review. However, District Governing Board policy decisions and assumptions are not subject to peer review. The following section is provided to clarify the role of the peer review panel. Staff will also provide further guidance or information on this issue to individual panel members upon their request.

Scope of Work: Policy versus Technical Issues

The responsibility of the peer review panel is to review technical or scientific data, methodologies, and conclusions used in the development of the MFL criteria. The term “technical” is key in understanding the scope of this process. Inherent in developing the proposed criteria is the application of “policies” and interpretations of the MFL statute. These policy considerations are only within the authority of the District’s Governing

Board to decide, and should be viewed as assumptions or conditions for the technical review. As a result, it is important to clearly delineate which issues are policy-based and which are within the scope of the technical peer review.

Generally, four types of policy decisions or assumptions were applied in developing the MFL criteria, as described below.

A. Protection of Water Resource Functions

In establishing MFLs, the District must identify and consider the relevant water resource functions of the water body. These functions are set forth in state law and listed in Chapter 1 of the MFL Document. Specific water resource functions for defining significant harm to the Loxahatchee River and Estuary were identified based on their relevance to the level of protection assigned to the significant harm standard, their applicability to the regional nature of the MFL, and the broad scope of District responsibilities under the authorizing statutes. A description of these relevant resource functions for the Loxahatchee River and Estuary is set forth in Chapter 4 of the MFL document.

B. Identification of Baseline Resource Conditions: Statutory “Considerations”

Another type of policy assumption or decision made in the development of the proposed MFL is the definition of the reference point or baseline condition of the subject water resources for which significant harm is to be determined. In establishing MFLs the Governing Board must consider changes and structural alterations to watersheds, surface waters, and aquifers and the effects such changes or alterations have had, on the hydrology of an affected watershed, surface water, or aquifer...” Section 373.0421(1)(a), F.S. (see attached). For example, large drainage systems have been constructed throughout South Florida and development of residential areas has occurred in these drained areas. As a result, in setting a MFL for any remaining natural areas, the Governing Board must also consider the impacts of such drainage and the hydrological limitations that now exist in the system in order to continue to provide flood protection. In that situation, the Governing Board may establish the MFL based on the needs of the impacted natural system, instead of the pre-development conditions. Significant harm is then determined based on how the MFL may impact the water resource function of the water body. Although the peer review panel may not necessarily agree with the policy assumptions made under this statute, it is essential that the peer review be conducted in light of any of these assumptions. The considerations under this statute and how they were applied in developing the proposed Loxahatchee River and Estuary MFL are discussed in Chapter 4 of the MFL document.

C. Level of Protection Provided by the “Significant Harm” Standard

The definition of “significant harm” is also based on previous Governing Board policy decisions and assumptions that are beyond the scope of this peer review. To provide an understanding of this definition, a description of the relevant legal and policy

assumptions is provided in Chapter 1 of the MFL document. The applicable narrative definition of “significant harm” is as follows:

‘Significant harm’ means the temporary loss of water resource functions which result from a change in surface water or ground water hydrology that take more than 2 years to recover, but which is considered less severe than serious harm (Rule 40E-8.021 (24), FAC).

The purpose of the MFL document is to identify the technical or scientific MFL criteria based on this definition of “significant harm.” The role of the peer review panel is to review the technical or scientific data, methodologies, and assumptions used in developing the specific MFL for the Loxahatchee River and Estuary.

D. Minimum Flow and Level Versus Restoration

The Minimum Flow and Level developed for the Loxahatchee River is intended to prevent significant harm to the resource. This differs from the concept of “restoration”, which seeks to return a portion of the river to some pre-existing historical condition. When reviewing the MFL document, the Peer Review Panel should be aware that the scope of this project is limited to development of the Minimum Flow and Level to protect the resource baseline conditions as described in the Document in Chapter 4 and is not restoration. It should be noted that as restoration plans are developed for the Loxahatchee River, the minimum flow and level may be revised through time to protect those enhanced or restored resource functions.

Some Specifics on Review of Policy and Technical Issues

A list of technical issues considered relevant to the proposed MFL establishment is provided under Task 1 in the Statement of Work. The panel members may also propose additional technical issues, which they identify. The following narrative outlines areas of the MFL document that pertain to the policy or technical aspects of establishing the MFL.

Chapter I summarizes the legal background of the MFL statute and framework of the related laws that apply to the District in Chapter 373, F.S. The panel members are requested to read this chapter and comment on any needed clarification or additional information that would help the reader better understand the logic and basis for the three types of policy decisions or assumptions discussed above.

Chapter II provides a detailed description of the Loxahatchee River, estuary and upstream watershed. Physical and hydrological attributes of the system are set forth, as well as a discussion of the water resource issues affecting the area. The panel members are requested to read this chapter and comment on any needed clarification or additional information that would help the reader better understand the logic and basis for the three types of policy decisions or assumptions discussed above.

Chapter III provides a discussion of (a) key water resource functions of the system that were considered in the development of the MFL, (b) resource protection issues, (c)

considerations and exclusions. This chapter is to be reviewed by the panel and comments provided.

Chapter IV identifies the technical or scientific “methods” used in developing the proposed MFL criteria. These “methods” are reviewable technical material and should be critiqued thoroughly by the panel.

Chapter V provides a summary of the scientific approach and technical relationships that were evaluated in defining significant harm for the water body and a detailed presentation of the proposed MFL criteria with supporting documentation. Panel members should review this chapter using the same guidelines for policy versus technical issues consistent with those set for the previous chapters.

Chapter VI outlines the MFL recovery and prevention plan, including implementation policies and process, an evaluation of additional options to obtain water from other basins, and an outline of research needs for the Loxahatchee River and Estuary.

Technical Appendices A-S provide supporting data and information for the technical criteria. These need to be reviewed for accuracy, relevance, and completeness.

Scope of Work (Duties and Tasks of the Peer Review Panelist)

During this project the panelist will:

Task 1: Acknowledge receipt of review materials within 48 hours of delivery

Task 2:

- a) Review background materials provided by the District to become familiar with the technical aspects of the proposed MFL criteria and the context of the criteria in existing District policy (not the subject of review)
- b) Review comments and suggestions given by the peer review panel for the 2001 Draft MFL Document

Task 3: Read the MFL document and prepare a written review of this document, including a summary, conclusions, and recommendations. The review will include answers to general questions provided by District staff (see below), will comment on how successfully the current MFL document addressed the Panel’s comments/suggestions from the 2001 Peer Review, and how well the technical criteria support the proposed MFL. This review will be submitted in both hard copy and a pre-designated electronic format.

It is requested that all electronic correspondence provided to the District be compatible with Microsoft Word 97.

For services rendered, expert panelists will each receive an honorarium.

Description of Expert Assistance Task (Work Breakdown)

Task 1. Acknowledgement of receipt of Review Materials and Statement of Work

Within two days of receiving the materials, the expert will acknowledge receipt by contacting John Zahina at 561-682-2824 or < jzahina@sfwmd.gov >

Task 2. Review Background Materials and 2001 Peer Review Panel Final Report

Prior to reading the MFL document, experts will review background materials as needed to familiarize themselves with technical aspects of the MFL. The background materials have been provided as reference materials only. Recommendations from the Final Report from the 2001 Peer Review Panel are also to be reviewed.

Task 3. Review Current MFL Document and Write Review Comments

The expert's primary responsibility will be to read and comment on the MFL document with review of the background materials on an as-needed basis. The reviewer will then prepare a review of the document, provide answers to questions provided by District staff, comment on how successfully District Staff has addressed issues from the 2001 Peer Review Panel Final Report, and how well the technical document supports the development of MFL criteria. This includes comments regarding the overall structure and layout of the document, the readability of both text and graphics, and the appropriateness of the document for its intended purpose.

Review comments should address but not be limited to, the **following general questions and technical issues:**

General Questions

1. Does the MFL document present a defensible scientific basis for setting minimum flow criteria for the water body? Are the approaches or concepts described in the document scientifically sound based on 'best available information'?
2. Are the proposed criteria logically supported by 'best available information' presented in the main body of the document? What additions, deletions, or changes are recommended by the Expert to enhance the validity of the document?

3. Are there other technical approaches to setting the criteria that should be considered? Is there available information that has not been considered by the authors? If so, please identify specific technical alternatives to setting the MFLs and the data available to validate the alternative approach.
4. Does the current draft MFL document adequately address the comments provided by the 2001 Peer Review Panel Final Report?

Specific **technical issues** to be evaluated by the Panel include:

The appropriateness of:

- Use and application of the “Valued Ecosystem Component” approach for establishing the MFL
- The proposed minimum freshwater flow regime proposed for the river system during drought conditions
- Completeness of the literature review for the intended purpose
- Statistical analysis and interpretation of historical flow, salinity, and vegetation data
- Methods used to estimate the movement and location of the freshwater-saltwater interface under different flow conditions
- Methods used to characterize the vegetation community composition and distribution
- Linkage or correlation of flow and/or salinity data to impacts to biological communities (has a scientific linkage been clearly established?)
- Use and interpretation of the results of a two-dimensional hydrodynamic-salinity model to describe the effect of various freshwater flow regimes for the river and estuary
- The use of historical hydrological and /or ecological data and findings to determine minimum flow criteria for the River
- Methods or approaches used to define specific “duration” values that are components of the minimum flow criteria for the River

The expert is requested to provide specific recommendations to address any drawbacks or deficiencies in the evidence described in the MFL document for the water resource. It is anticipated that the expert will place emphasis on technical issues and the water resource functions most closely allied with his/her area of expertise. However, comments on any technical aspect of the document are welcome.

Deliverable 1: Acknowledgement of receipt of materials

The July 15, 2002 Draft MFL document has been mailed to Peer Review panelists. *Within two days of receiving this statement of work, the expert will acknowledge receipt by contacting John Zahina at 561-682-2824 or < jzahina@sfwmd.gov >*

Date Due: Within 48 hours of receipt of materials

- Deliverable 2:** Review background materials and 2001 Peer Review Panel Final Report
- Due Date:** August 21, 2002, within 21 days after acknowledgement of receipt of materials.
- Deliverable 3:** Written review of the MFL document, including a summary, conclusions, and recommendations.
- Date Due:** August 21, 2002, within 21 days after acknowledgement of receipt of materials.

Responsibilities of Requesting Division

The Project Manager is John Zahina, Staff Environmental Scientist, Planning and Development Division, SFWMD. He will provide the necessary background materials and draft MFL document to each panelist.

Evaluation Criteria for Acceptance of Deliverables

Task 1. Successful completion of Task 1 will be evidenced by judgement of District staff that the Expert was adequately prepared to discuss information in the background materials. The Expert's questions, concerns, and information needs should reflect a thorough review of background materials.

Summary of Time Line and Responsibilities

Task	Responsible Party	Date Due
Task 1: Acknowledge Receipt of Materials from SFWMD	Peer Panel	August 1, 2002 or Two days after receipt
Task 2A: Review Background Materials/Written Review	Peer Panel	August 21, 2002
Task 2B: Review 2001 Peer Review Panel Final Report	Peer Panel	August 21, 2002
Task 3 Provide Written Report of Current MFL Document	Peer Panel	August 21, 2002
Acknowledge Receipt of Written Reports from Peer Panel Experts	John Zahina	August 27, 2002
Issue Payment for Services	John Zahina	August 30, 2002

Payment for Services: Following satisfactory completion of all services required, the panelists will be paid an honorarium or fixed lump sum of \$2000.00 for all labor and expenses.

APPENDIX I

Background & Review Materials

Legal Information

- Requirements of MFLs from Florida Statutes, Chapter 373.042 (Appendix L, pg. L-9)
- Final MFL Rule as published in F.A.W. March 30, 2001

Loxahatchee River & Estuary

1. Draft Technical Documentation to Support Development of Minimum Flows and Levels for the Loxahatchee River and Estuary. SFWMD.
2. Draft Appendix A-S, Technical Documentation to Support Development of Minimum Flows and Levels for the Loxahatchee River and Estuary. SFWMD.